

Otitis Media: Evaluation Summary

Assess Risk Factors (pp. 7-8)

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| <ul style="list-style-type: none"> • Infant feeding • Pacifier use • Secondary smoke • Day care • Socioeconomic status | <ul style="list-style-type: none"> • Season • Craniofacial distortions • Dairy • Allergies • Diet |
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“Certain” diagnosis of AOM must meet the following 3 criteria:

- 1) rapid onset of signs and symptoms,
- 2) presence of middle ear effusion, and
- 3) signs and symptoms of middle-ear inflammation.

Key Symptoms and Signs: Acute Otitis Media vs. Otitis Media with Effusion (p. 10)

	Acute Otitis Media	Otitis Media with Effusion	
Presentation	Patient appears ill May be dehydrated from vomiting, diarrhea, fever Toddler/child may appear listless	Patient appears normal to mildly ill	
Symptoms	Ear pain	No pain or a milder form of ear pain	
	Otorrhea	Fullness or stuffiness of ear(s)	
	Irritability in infant or toddler	Irritability possible	
	Fever/chills	No fever or low grade fever	
	Other symptoms that may be present include: sleep disturbance, nausea, vomiting, diarrhea		
History	Recent upper respiratory tract infection	Recent upper respiratory tract infection, recent AOM	
	Rapid onset of symptoms (< 48 hrs)	Slower onset, may be more chronic in nature	
	See risk factors (above).	See risk factors (above).	
Exam	Fever	No fever or low grade fever	
	Presence of effusion	Presence of effusion	
	Color Adjusted Positive LR (95% CI)⁻	Normal to <u>retracted</u> tympanic membrane. The membrane can be cloudy with a visible air-fluid level or bubble, making it difficult to distinguish from AOM.	
	▪ Cloudy		34 (28-42)
	▪ Distinctly red [†]		8.4 (6.7-11)
	▪ Slightly red		1.4 (1.1-1.8)
▪ Normal	0.2 (0.19-0.21)		
Position	Normal or hypomobility of the tympanic membrane; [‡] however, the membrane can have distinctly impaired mobility, making it difficult to distinguish from AOM.		
▪ Bulging		51 (36-73)	
▪ Retracted		3.5 (2.9-4.2)	
▪ Normal	0.5 (0.49-0.51)		
Mobility			
▪ Distinctly impaired		31 (26-37)	
▪ Slightly impaired		4.0 (3.4-4.7)	
▪ Normal	0.2 (0.19-0.21)		
Conductive hearing loss	Conductive hearing loss		

⁻ Results reported by Karma (1989) were calculated by combining data reported from two groups. Results are rounded so that precision is not overstated.

[†] Distinctly red was described qualitatively as “hemorrhagic, strongly red, or moderately red.”

[‡] Diagnosed by 1) tympanocentesis 2) fluid in the ear due to rupture 3) limited or absent mobility of the tympanic membrane as diagnosed by pneumatic otoscopy, tympanogram, or acoustic reflectometry.

Evaluation Steps (p. 11)

- 1. Take appropriate history.**
- 2. Check for signs of infection.**
 - a) Check vital signs.
 - b) Inspect head, neck and ears for symmetry and signs of infection.
 - c) Palpate soft tissue structures of neck.
 - d) Apply digital pressure over mastoid.
 - e) *If infection is suspected*, look for additional evidence of complications (e.g., enlarged lymph nodes, sinus and throat inflammation, painful mastoid).
- 3. Observe for facial distortion.**
- 4. Evaluate for hearing loss.**
 - a) Whisper test/Watch test
- 5. Evaluate external ear.**
 - a) Inspect external ear.
 - b) Tug on pinna (painful?).
 - c) Inspect external canal (otoscope).
- 6. Evaluate middle ear.**
 - a) Otoscopy
 - b) Pneumatic otoscopy
 - c) Autoinflation with otoscopy
- 7. Evaluate neck biomechanics.**
 - a) Assess cervical spine.
- 8. If there appears to be no presence of otitis media or other ear pathology, check for other possible sources of referred pain to the ear.**
 - a) Check TMJ.
 - b) Check cranial nerves V, VII, IX and X.
 - c) Check lateral and medial pterygoid, masseter and SCM.
 - d) Check for tonsillitis, pharyngitis and carcinoma of the hypopharynx, larynx and cleft defects.
- 9. If necessary, order or refer for appropriate ancillary studies.**
 - a) Acoustic tympanometry
 - b) Audiometric evaluation
 - c) CBC

Otitis Media: Management Summary

Specific Therapeutic Objectives (p. 22)

1. Address the patient's symptoms.
2. Affect the Eustachian tube and improve drainage from the middle ear.
3. Identify and, if possible, eliminate the impact of risk factors for future recurrence.
4. In the case of OME with hearing impairment, optimize listening–learning environment.

Summary of In-Office Procedures (pp. 23-26)

Main procedures

- Administer the endonasal technique, if tolerated.
- Instruct the patient on how to autoinflate the affected ear(s).

Optional/Adjunct Procedures

- Examine and treat the spine for joint dysfunction. Pay particular attention to the upper cervical area (C0-C3).
- Perform auricular adjustment.
- Perform soft tissue massage and instruct the patient on how to massage the soft tissue structures of the neck to promote lymphatic drainage.

General Self-Care Advice (p. 29)

- For those patients experiencing significant or intractable pain, administer heat, warmed oil, or ear drops. Do not administer anything in the ear if there is rupture or perforation of the tympanic membrane.
- Perform frequent autoinflation.
- Take analgesic/NSAIDs, if needed.

Clinical Endpoints and Outcome Measurements (p. 30)

- Pain resolves.
- Temperature returns to normal.
- Ear congestion resolves.
- Auditory acuity improves.
- Activity level and sleep pattern return to normal.

Considerations for Referral (p. 30)

- Infants less than 6 months
- Patients with fever above 102.2°F (39°C) (oral temperature) or 100.4°F (38°C) (rectal temperature)
- Infants/children 6 months to 2 years with a certain diagnosis of AOM
- Patients with severe illness
- Infants or children who may be dehydrated or presenting with severe symptoms:
 - severe pain
 - very ill, very agitated or listless appearance
 - neurological signs or symptoms
 - severe hearing loss
 - exquisite tenderness over the mastoid process elicited on exam
- For patients with AOM, failure of symptoms to resolve within 48-72 hours or if conservative measures fail to stem the progression of symptoms (progressive or persistent listlessness, pain, fever or congestion)
- Signs of mastoiditis (presence of an auricular mass, post-auricular swelling, edema or redness, tenderness with palpation), petrous apicitis, otogenic skull base osteomyelitis, central nervous system infection or other progressive infectious disorder.
- Rupture of tympanic membrane
- Chronic OME (lasting longer than three months), which is not responding to treatment
- When OME persists for three months or longer, hearing testing is recommended. When children with OME demonstrate any language delay, learning problems, or a significant hearing loss, they should be referred to someone who specializes in these areas.
- Language testing is also recommended for children with OME and hearing loss.
- Failure to respond in 3-5 days or if conservative measures fail to stem the progression of symptoms (progressive or persistent listlessness, pain, fever, congestion)
- Chronic otitis media with effusion (serous otitis media lasting longer than three months), which is not responding to treatment
- Facial paralysis
- Sigmoid sinus thrombosis

The explanation given during the PARQ can be short and should cover the following points:

1. AOM is part of an upper respiratory tract infection;
2. It has been well-established that in most cases children will recover regardless of antibiotic prescription;
3. Dangerously late complications from AOM may unfortunately occur regardless of whether antibiotics are or are not delivered in the course of the acute illness. Fortunately, it was demonstrated in one study that few of these serious complications arise when utilizing this conservative approach.
4. Parental guardians can be instructed to administer analgesics as needed according to the child's weight.

In cases of persistent (over 48 hours) high fever [102°F (38.8°C) or above] patients should be instructed to consult their primary care provider.

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